

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A computerized method for producing code in an architecture description language, said method comprising:

a.——reading an opcode summary table having entries representing a plurality of instructions;

b.——analyzing said opcode summary table to determine a layout of said opcode summary table;

grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole;

e.——generating code for an instruction in architecture description language format based on at least one of the groups; and

d.——repeating said generating for each line in group derived from said opcode summary table, resulting in an architecture description language (ADL) representation of the opcode summary table ~~such that the ADL representation generates a representation of structure.~~

2. (Original) The method of claim 1 where the opcode summary table is provided in a spreadsheet.

3. (Original) The method of claim 1 where the opcode summary table is provided in a comma separated value format.

4. (Currently Amended) A computerized method for producing code in an architecture description language format, said method comprising:

reading an opcode summary table having entries representing a plurality of instructions;

analyzing said opcode summary table to determine a layout of said opcode summary table;

grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole;

determining a beginning of a group from said opcode summary table;

generating root code for a hierarchy in architecture description language format based on at least one of said groupings, ~~wherein the root code in architecture description language generates a representation of structure~~;

cycling through each group to generate detailed code in architecture language format; and

repeating said cycling until an end of the opcode summary table is reached.

5. (Original) The method of claim 4 where the opcode summary table is provided in a spreadsheet.

6. (Original) The method of claim 4 where the opcode summary table is provided in a comma separated value format.

7. (Previously Presented) The method of claim 4 where the opcode summary tablet is pre-formatted such that the opcodes are separated into groups prior to being read.

8. (Currently Amended) The method of claim 4 where said cycling further comprises determining a presence of sub-groups within at least one of said groups and generating detailed code for each sub-group within said at least one group.

9. (Currently Amended) A computer program embodied in at least one machine-readable medium, the computer program comprising:

a first computer code section to read an opcode summary table having a plurality of entries representative of a like plurality of microprocessor instructions;

a second computer code section to produce a grouping of at least two of said entries in accordance with a grouping criteria, including grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole; and

a third computer code section to generate an encoded representation of said grouping, wherein the encoded representation of said grouping includes an Architecture Description Language representation ~~that generates a representation of structure~~.

10. (Currently Amended) A computerized method for producing code in an architecture description language, said method comprising:

reading an opcode summary table having a plurality of entries representing a corresponding plurality of instructions;

analyzing said opcode summary table to determine a layout of said opcode summary table and constructing an opcode super group based on at least two opcode groups identified by said analyzing, including grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole; and

generating code for an instruction in architecture description language format based on said opcode super group ~~and which includes a representation of structure~~.

11. (Currently Amended) A computerized method for producing code in an architecture description language format, said method comprising:

reading an opcode super group table having a plurality of entries representing a corresponding plurality of instructions;

analyzing said opcode super group table to determine a layout of said opcode super group table;

determining a presence of a sub-group from said opcode super group table, including a sub-group of instructions that have been grouped together based on bit similarities between the instructions evaluated as a whole;

generating root code in architecture description language format based on the sub-group;

cycling to generate detailed code for the sub-group in architecture description language format; and

repeating said cycling and determining until an end of the opcode super group table is reached, ~~including generating a representation of structure using the architecture description language format.~~

12. (Currently Amended) A computer program embodied in at least one machine-readable medium, the computer program comprising:

a first computer code section to read an opcode summary table having a plurality of entries representative of a like plurality of microprocessor instructions;

a second computer code section to produce a first grouping of at least two of said entries in accordance with a grouping criteria, including grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole;

a third computer code section to produce a second grouping of at least two of said entries in accordance with a grouping criteria, including grouping instructions from the opcode summary table into groups according to bit similarities between the instructions evaluated as a whole;

a fourth computer code section to produce a super grouping of the first and second grouping groupings; and

a fifth computer code section to generate an encoded representation of said super grouping, wherein the encoded representation of said grouping includes an architecture description language representation ~~that generates a representation of structure.~~

13. (Previously Presented) The method of claim 1, wherein the representation of structure comprises an ADL representation of a microprocessor.

14. (Previously Presented) The method of claim 1, wherein the representation of structure comprises an ADL microprocessor representation utilizable by an assembler generator.

15. (Previously Presented) The method of claim 1, wherein the representation of structure comprises an ADL microprocessor representation utilizable by a simulator generator.

16. (Currently Amended) A method for producing code in an architecture description language (ADL), the method comprising:

reading an opcode summary having entries representing a plurality of instructions;  
analyzing the opcode summary to determine a layout of the opcode summary;  
grouping instructions from the opcode summary into groups according to bit similarities between the instructions evaluated as a whole;  
generating code for an instruction in ADL format based on the groups;  
repeating the generating for each ~~line in group~~ line in group derived from the opcode summary,  
resulting in an ADL representation of the opcode summary; and  
using the ADL representation as input to generate a simulator tool.

17. (Currently Amended) A computerized method for producing code in an architecture description language (ADL) format, the method comprising:

reading an opcode summary having entries representing a plurality of instructions;  
analyzing the opcode summary to determine a layout of the opcode summary;  
grouping instructions from the opcode summary into groups according to bit similarities between the instructions evaluated as a whole;  
determining a beginning of a group from the opcode summary;  
generating root code for a hierarchy in ADL format based on the grouping;

cycling through each group to generate detailed code in ADL format;  
repeating the cycling until an end of the opcode summary is reached; and  
using at least some of the code in ADL format as input to generate a simulator tool.

18. (Currently Amended) An article of manufacture, comprising:  
a machine-readable medium having instructions stored thereon, the instructions including:

first instructions to read an opcode summary having a plurality of entries representative of a like plurality of microprocessor instructions;

second instructions to produce a grouping of at least two of the entries in accordance with a grouping criteria, including grouping instructions from the opcode summary into groups according to bit similarities between the instructions evaluated as a whole;

third instructions to generate an encoded representation of the grouping in ADL format; and

fourth instructions to use the encoded representation in ADL format to generate a simulator tool.

19. (Currently Amended) A system, comprising:

a means for reading an opcode summary having entries representing a plurality of instructions;

a means for analyzing the opcode summary to determine a layout of the opcode summary ~~table;~~

a means for grouping instructions from the opcode summary into groups according to bit similarities between the instructions evaluated as a whole;

a means for generating code for an instruction in architecture description language (ADL) format based on the groups; and

a means for repeating the code generation for sections of the opcode summary, resulting in an ADL representation of the opcode summary ~~that includes representation of structure.~~

20. (Currently Amended) The system of claim 19, further comprising means for using the ADL representation to generate a means for simulating operation of the structure of a processor using the ADL representation of the structure.